

# News Briefs

## Cassini launch remains on schedule

The Terminal Countdown Demonstration of the Air Force Titan IV rocket for NASA's Cassini mission has been successfully completed and launch of the Saturn explorer remains on schedule. The dress rehearsal was a retest after leaks were repaired on the Centaur upper stage identified during the initial demonstration on Aug. 5. The Cassini spacecraft is scheduled for liftoff from Cape Canaveral Air Station, Space Launch Complex 40, on Oct. 6 at 4:38 a.m. JSC time. This will begin Cassini's 6.7 year journey to explore the planet Saturn.

## NASA selects replacement for Hubble instrument

NASA has selected a proposed scientific investigation that includes the development of a new spectrograph for the Hubble Space Telescope. The Cosmic Origins Spectrograph is planned for installation during the fourth servicing mission scheduled for late in 2002. The new instrument's capabilities will be a major enhancement to Hubble's spectrographic capabilities at ultraviolet wavelengths. It will allow astronomers to study the very early Universe and the creation of the heavy elements during the first period of star formation billions of years ago.

## New manufacturing method could lower air travel costs

NASA and Boeing recently demonstrated a new composites manufacturing method—using an advanced NASA-developed stitching machine—that is expected to have a major impact on the way aircraft wing structures are fabricated. By replacing large metal structures on airplanes with composite materials, the aeronautics industry expects to achieve large savings on weight and production that should translate directly into lower airfares for the public in the near future. Composite wing structures are expected to cost less and weigh less than aluminum wings while remaining as damage-tolerant and carrying the same loads from weight and pressure. Part of the weight and time savings come from the elimination of many of the 80,000 metal fasteners found on an aluminum wing.

# Foreign teachers have out-of-this-world experiences

For 23 teachers from around the world, it was the ultimate field trip—without their students. Elementary and secondary school teachers from U.S. State Department schools who attended the Aerospace Science In-Service Institute recently had a common mission—gathering data about space technology to share with their American students abroad. In its 10th year, the institute offers two weeks of workshops—made possible by a collaboration between

the University of Houston's College of Education, the Office of Overseas Schools and JSC. Some of the teachers arrived at NASA with stars in their eyes. "It is the dream of my life. I'm finally here and I can't believe it," said Ana Laura Ruiz-Barrios, a 12th-grade physics teacher from the American School of Guatemala. Houston native Mauri Ulivi made the journey home from the American International School in Genoa, Italy, to attend.

In one workshop, teachers were given a chance to manipulate Earth toys and asked to predict how they would operate in microgravity. A videotape demonstrating the actual results is one of the many resources the teachers will be able to share with their students, who will use mathematics, graphing and drawing skills to make their own predictions. As interest in photographs of Martian landscapes coming back via Pathfinder and Sojourner reached its zenith, the institute also featured a

briefing on Mars exploration and a chance to view and touch lunar and Martian meteorites. Other workshops included visits to Mission Control and the space food lab, a peek inside space station and shuttle mock-ups, a flight physiology lesson, "Mission Math" classroom activities and a field trip to the Challenger Center at the Houston Museum of Natural Science. One teacher said it was valuable to gain an understanding of the repercussions of living in microgravity.

# Educators wrap-up summer workshops

Remember those first-day-of-school assignments to write an essay about summer vacation adventures? For 125 teachers who came back to school at JSC development workshops this summer, those essays could be very long. Family members and close friends of JSC civil service and contractor employees spent a week learning about NASA's programs and the engineering development and scientific research at JSC. Teacher participants received several sessions in using NASA education materials and carrying out the hands-on activities to demonstrate principles of math, science and technology. Middle school teachers from Clear Creek ISD immersed themselves in technology training based on the International Space Station. The teachers explored how to apply current technology to classroom instruction and how the space station program can be used to teach subjects across the curriculum. The Pathfinder's landing on Mars and events at the Houston Museum of Natural Science finished off a workshop on the geology of Mars and planning for robotic and human exploration of Earth's sister planet.

The agencywide Education Workshop for Elementary School Teachers, or NEWEST, attracted 25 teachers from around the U.S. Teachers compete for slots through a program administered by the National Science Teachers Association. The group specialized in creating classroom projects on Mars with emphasis on Internet-based teaching and information resources. Life science teachers from middle schools in Colorado, Kansas, New Mexico, Oklahoma, Texas and South Dakota devoted three full weeks at JSC to an intensive study of the space station and its applications to life science investigations. The teams created a physiology-based classroom activity. Each team will derive about 20 percent of the data necessary to solve the research problem, then teams will share their findings via the Internet. "Overall, I think we sent our educators back to the classroom well equipped for the new year," said Billie Deason, lead of the education team in the Office of Public Affairs. "If a few teachers inspire a student to focus on an engineering, science or math career, then our resources were well spent."



JSC Photo 97-10287 by Steve Candler

**Students of the International Space School Foundation explore virtual reality in JSC's Robotic Systems Evaluation Lab. Ten science camp student groups, ranging in age from middle school to college, visited JSC this summer along with accompanying teachers.**

# Low series seeking to expand center management vision

**(Continued from Page 1)** state government programs, which has been credited with saving taxpayers more than \$8.5 billion. A significant amount of savings came from the state's switch from the use of paper food stamps to computerized bank-type Lone Star cards. The Texas Performance Review was established not for the sake of finding \$1 billion or \$2 billion, Sharp said, but to see if state spending could be cut back while keeping the government working as well or better than before. Some of the initiatives involved technology advances "that we borrowed from some of the contractors that some of you folks work for." The food stamp program review began in 1991, Sharp said. The review showed that the state was paying \$12 million a year to paper companies for the paper, another \$66 million for printing, \$6.2 million for a courier to carry the printed

stamps to Texas distribution center, and postage to send 1.3 million pieces of mail every week. Additional costs were incurred by grocery stores, which had to hand-count stamps they took in, and banks that had to recount them after they were redeemed. Then, the state had to hire another courier service to send stamps back to the Federal Reserve, which spent \$24.2 million a year to shred the used stamps. And still, Sharp said, every time a federal narcotics officer made a bust, some 40-60 percent of cash is food stamps, indicated a large amount of fraud. "It didn't take a rocket scientist to figure out that maybe we were spending a little bit more on overhead than we are on feeding poor kids," he said. "Consider, we've blown 150 million bucks here and we've yet to put a piece of cheese in a poor kid's mouth anywhere in the state of Texas."

For the past two years, the state has been using the electronic bank cards, which "are hard to sell on the corner for crack cocaine." Sharp admitted that fraud occurs, but it requires the complicity of a people who have a card-reading machine and is easier to police. The day the cards went into use, he said, 22,000 people dropped off the food stamp rolls in Houston and it turned out that the intended recipients had died and the people who were receiving their mail had been using the vouchers to illegally obtain food stamps. Even with that reduction, the city sold \$4.5 million more in food through the Lone Star cards. The experience was similar in Dallas, where 613,000 left food stamp roles and about the same amount of food is being purchased. Sharp said neural network technology, which is helping locate credit card fraud by allowing the computers to learn as they perform their

programs, is being employed to reduce fraud in Medicaid. In much the same way as credit card companies can tell if a card is stolen when several tanks of gas are purchased on the same day as a pair of expensive tennis shoes, the technology is able to pinpoint medical providers who are soliciting low-income residents on which to run expensive but unnecessary medical tests. "The point is that there are things we can do within our families and our business and everywhere else that can make things actually work better and cost less money," he said. The George M. Low Leadership Series, sponsored by the JSC Human Resources Office, is intended to stimulate thoughtful discussion and expand the vision of the center's leaders. It honors Low, who joined the Manned Spacecraft Center in 1964 and served here as deputy center director and manager of the Apollo Spacecraft Program Office.

# Guests enjoy freedom to explore

**(Continued from Page 1)** NASA astronauts were on hand for autographs and picture taking. The crew of the upcoming 90-day closed chamber test explained the special challenges of living in a self-contained environment for months on end. Guests also were able to bring a little bit of the space program home because some demonstrations yielded souvenirs such as personalized name plates, aluminum shuttle components, vacuum molded plastic parts, photos of visitors in a shuttle seat, and JSC decals. Mars was featured with the latest photographs from the Sojourner rover on the Red Planet and literature about possible human exploration of the red planet. Teague Auditorium offered slide presentations about the past, present and future of space travel.

Astronauts and scientists discussed a variety of topics. "I enjoyed hearing Astronaut John Young speak at Teague Auditorium," said a visitor from Texas. "He was best of all. Please be sure to have him speak at Teague in 1998." Outside the center's gates, Ellington Field and the Sonny Carter Training Facility offered numerous attractions such as the KC-135A "Vomit Comet", the 747 Shuttle Carrier Aircraft, and the T-38 training jets for visitors to see. The Texas-sized 6.2 million gallon pool for simulating zero gravity for spacewalk training was featured at the Carter site. "I liked the fact that it was open to park and walk anywhere and that so many buildings were open with knowledgeable personnel," said a visitor from Texas.

Space News

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# Next blood drive scheduled for Safety, Total Health Day

**(Continued from Page 1)** the generosity of donors and have many that donate at every drive. It really made us feel good when St. Luke's gave special awards to our co-workers who reached gallon marks." Thirty-two employees reached the one gallon mark while 10 employees received a special two-gallon award. Three employees were awarded the three-gallon donation award and two JSC employees won awards for donating four gallons. Tom Baugh of the Institutional Business Management Office received an award for reaching the six-gallon mark. Mendez said St. Luke's also encourages families and friends of patients to donate blood for individuals who they know are in need of

blood. Not only are people able to contribute to the overall blood supply, but by replacing blood for a specific patient, there is an opportunity to financially assist with some of the processing costs associated with blood transfusions. "At the blood drive on Aug. 12 and 13, we displayed a poster with the names of people who we knew needed replacement credits," Mendez said. "We plan to continue doing this at all our blood drives." The hospital also sponsors drives that are strictly replacement drives, where credit for blood donations are applied to a patient's account either here or at another hospital. The next opportunity to donate at a JSC on-site blood drive is scheduled in conjunction with Safety & Total Health Day on Oct. 15-16.